

SPLIT 139.7

Dart Aerospace Ltd.

Date: Friday, 02/05/2008 8:50:07 AM  
User: Julie Lecocq

# Process Sheet

Customer : CU-DAR001 Dart Helicopters Services  
Job Number : 38982  
Estimate Number : 10281  
P.O. Number :  
This Issue : 02/05/2008 S.O. No. :  
Prsht Rev. : NC  
First Issue : / / Type : MACHINED PARTS  
Previous Run : 37072  
Written By :  
Checked & Approved By : JUD 08.5.02  
Comment : Est Rev:Pick:A 04.02.18 New issue KJ/DS

Drawing Name : BRACKET ASSEMBLY  
Part Number : D3183043  
Drawing Number : D3183 REV C1  
Project Number : N/A  
Drawing Revision : C1  
Material :  
Due Date : 30/05/2008 Qty: 24 Um: Each

(2)

## Additional Product

Job Number:



Seq. #: Machine Or Operation: Description :

1.0 M174B2000X01500 17-4 SS Bar



Comment: Qty.: 0.4812 f(s)/Unit Total: 11.5492 f(s)

Material: 17-4 SS Bar per AMS 5604/5643

(M17-4-B1.500x02.000)

Identify for D3183-043

Batch:

M17773

x 26/ks

HA/SA/omd

08/05/21

3 x M19478

3 x M14773

(24)

2.0 BAND SAW BAND SAW



Comment: BAND SAW

Cut blanks: (1.500" x 2.000") 5.500" long

omd/SA 08/05/05 (26/ks)

(24)

3.0 HAAS1 HAAS CNC VERTICAL MACHINING #1



Comment: HAAS CNC VERTICAL MACHINING #1

1-Machine D3183-3 as per Folio FA322 and Dwg D3183

Identify as D3183-3

2-Deburr

3-Scribe batch number

SA/M.A

08/05/26

4.0 QC2 INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

SA/M.A

08/05/26

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3183-043 PAR #: N/A Fault Category: Prod / Machined NCR: Yes No DQA: 2 Date: 08/05/30  
 QA: N/C Closed: 2 Date: 08/05/30

NCR: <u>38982</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
08/05/23	3.0	3 parts scrap 4 parts flew off the jig while machining.		Scrap and Destroy and Replace BE 119476 Qty 42	SD 08/05/23	08/05/30		08/05/30
08/05/23	3.0	1 part scrap 'F' axis off by .010"		Scrap BE 119476 Qty 1 Sign-off and Replace	SD 08/05/23	08/05/30		08/05/30
08/05/25	3.0	2 parts scrap 6 parts flew off the jig while machining reason: round corners on material		Scrap and Destroy and Replace Qty 12 BE 114773	N.A 08/05/25	08/05/30		08/05/30

NOTE: Date & initial all entries



Date: Friday, 02/05/2008 8:50:07 AM  
User: Julie Lecocq

## Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: BRACKET ASSEMBLY

Job Number: 38982

Part Number: D3183043

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

QC8

SECOND CHECK



Comment: SECOND CHECK

508/05/28

6.0

D312121

Bolt



Comment: Qty.: 2.0000 Each(s)/Unit Total : 48.0000 Each(s)

Pick:

Qty Part Number

Description Batch

2 D3121-21

Bolt

1338994

51 08/05/28

7.0

D3183045

Bearing Assembly



Comment: Qty.: 2.0000 Each(s)/Unit Total : 48.0000 Each(s)

Pick:

Qty Part Number

Description Batch

2 D3183-045 Bearing Ass

1338104 x3

1338983 1

51 08/05/28

8.0

SMALL FAB 1

SMALL & MEDIUM FAB RESOURCE 1



Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble D3183-043 as per Dwg D3183.

51 08/05/28

9.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

508/05/28 @2

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location:

PPP 39006

1338 08/05/28 @2

11.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

08/05/29

Job Completion



MF 08-05-28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b> 38982
<b>Description:</b> Bracket		<b>Part Number:</b> D3183-3
<b>Inspection Dwg:</b> D3183	<b>Rev:</b> C1	<b>Page 1 of 1</b>

### FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

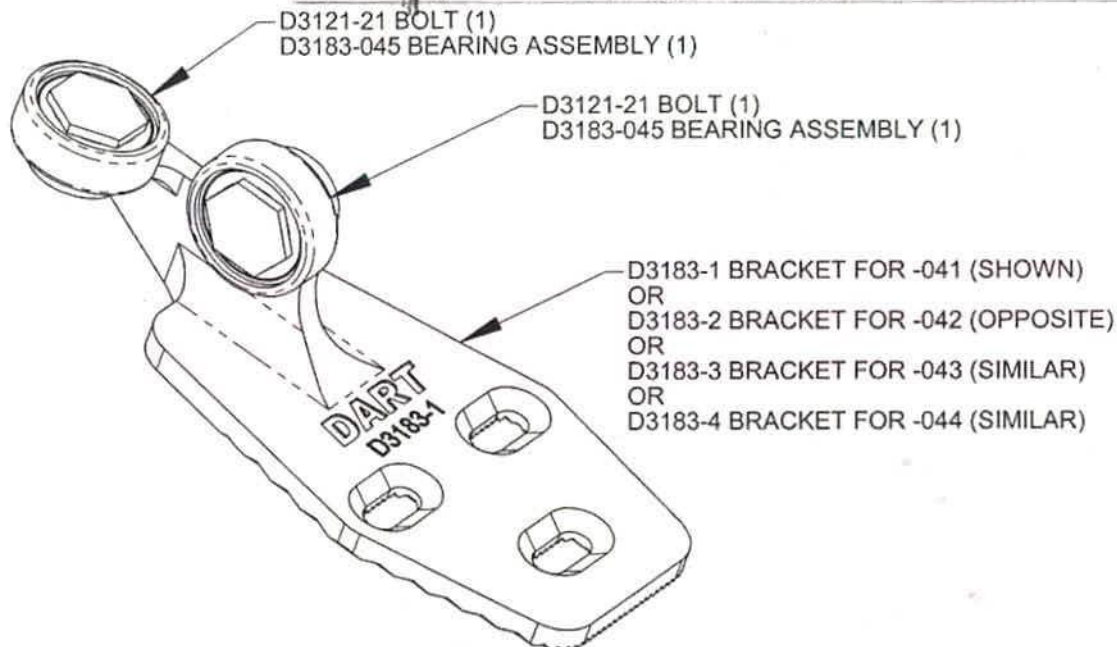
Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
R0.190	+/-0.030	R.188	/			
R0.063	+/-0.010	R.063	/			
0.182	+/-0.010	.185	/			
0.070	+/-0.010	0.073	/			
0.100	+/-0.010	.100	/			
Ø0.201 x 0.100	+/-0.010	Ø0.201 x 100°	/			
0.182	+/-0.010	.185	/			
5.32	+/-0.030	5.323	/			
5.036	+/-0.010	5.036	/			
2.120	+/-0.010	2.120	/			
1.290	+/-0.010	1.290	/			
0.365	+/-0.010	.366	/			
0.218	+/-0.010	.211	/			
1.030	+/-0.010	1.030	/			
1.90	+/-0.030	1.887	/			
1.012	+/-0.010	1.012	/			
Ø0.201 x 0.100	+/-0.010	Ø0.201 x 100°	/			
0.786	+/-0.010	0.778	/			
Ø0.392	+0.002/-0.000	Ø0.393	/			
R0.19	+/-0.030	R.19	/			
3.954	+/-0.010	3.954	/			
0.162	+/-0.010	0.160	/			
R0.19	+/-0.030	R.19	/			
R0.25	+/-0.030	R.25	/			
4.26	+/-0.030	4.26	/			
2.080	+/-0.030	2.070	/			
1.155	+/-0.010	1.150	/			
0.162	+/-0.010	.162	/			
0.36	+/-0.030	0.355	/			
0.615	+/-0.010	.615	/			
0.435	+/-0.010	.436	/			
0.200	+/-0.010	.203	/			
0.381	+/-0.010	.372	/			
0.032	+/-0.010	0.030	/			

<b>Measured by:</b> SJA/H.A. 08/05/26	<b>Audited by:</b> gnd	<b>Prototype Approval:</b>	N/A
<b>Date:</b> 08/05/23	<b>Date:</b> 08/05/26	<b>Date:</b>	N/A

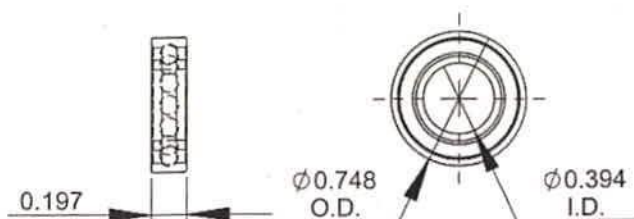
Rev	Date	Change	Revised by	Approved
A	03.11.12	New Issue P/O D3183-043	KJ/RF	
B	04.03.15	Changes as per revision C	KJ/JLM/RF	
C	06.03.09	Dwg Rev update	KJ/JLM	
D	08.01.28	0.182 dimension removed	KJEC/DD	

**DART****RELEASED**  
04.03.01

DESIGN #	DRAWN BY UP	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. <b>D3183</b>	REV. C SHEET 1 OF 4
DATE <b>04.02.17</b>		TITLE <b>BRACKET ASSEMBLY</b>	SCALE 1:1
A	03.01.24	NEW ISSUE	
B	03.06.17	REMOVE BEARING; 1.012 WS 0.882	
C	04.02.17	ADD -045/-9; 0.182 WAS 0.431	
C1	04.11.09	0.830 WAS 0.850	



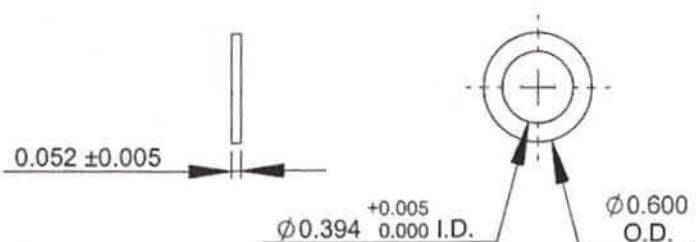
**D3183-041 BRACKET ASSEMBLY (SHOWN)**  
**D3183-042 BRACKET ASSEMBLY (OPPOSITE)**  
**D3183-043 BRACKET ASSEMBLY (SIMILAR)**  
**D3183-044 BRACKET ASSEMBLY (SIMILAR)**



**D3183-5 BEARING:**  
**SPECIFICATION CONTROL DRAWING**

- 1) SINGLE ROW, DEEP GROOVE, CONRAD TYPE, SHIELDED
- 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES

SHOP COPY  
TURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38982



**D3183-7 WASHER**

- 1) MATERIAL: AISI 303 ROUND BAR (M303R) ANNEALED
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES

COPYRIGHT © 2003 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

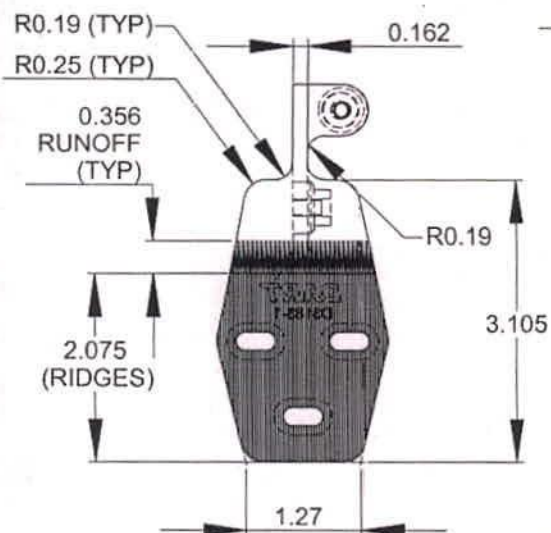
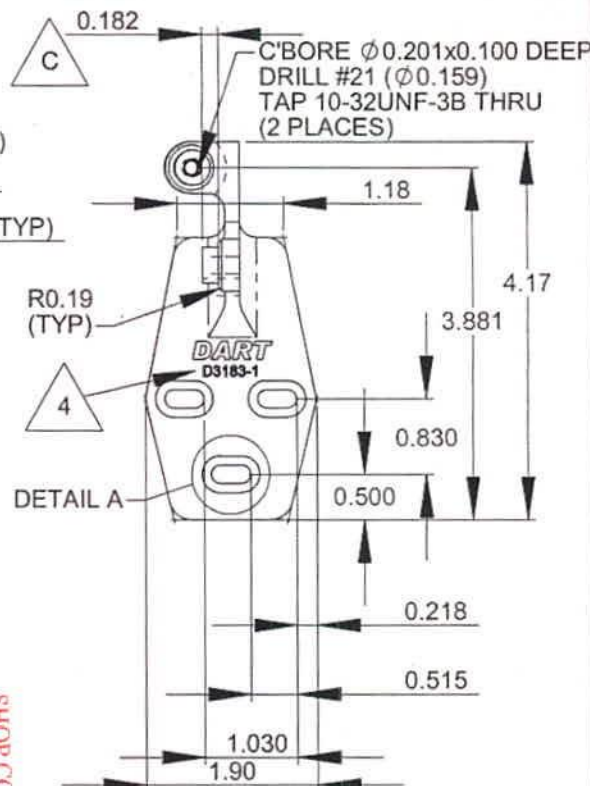
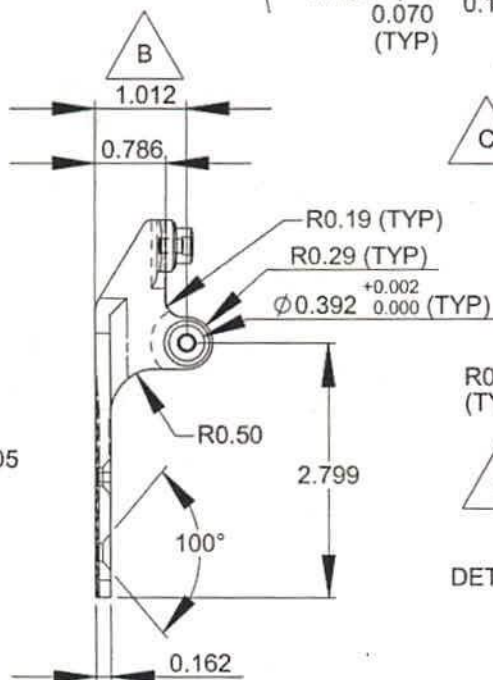
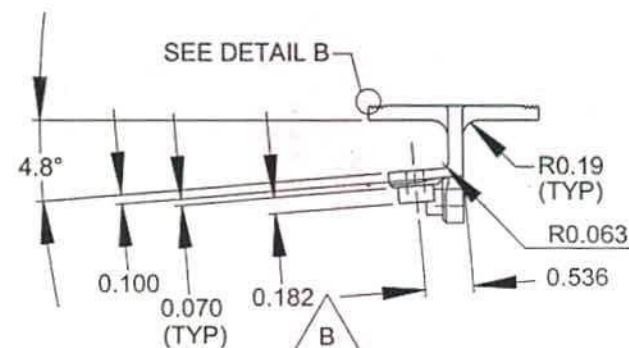


RELEASED  
04.03.01

**DART**

QA COPY ISSUED

DESIGN	DRAWN BY	DART AEROSPACE LTD
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA
DATE 04.02.17	DRAWING NO. D3183	REV. C
TITLE BRACKET ASSEMBLY	SCALE 1:2	SHEET 2 OF 4



D3183-1 BRACKET SHOWN  
D3183-2 BRACKET OPPOSITE

- 1) D3183-1 CAN BE MADE FROM D3183-3  
D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

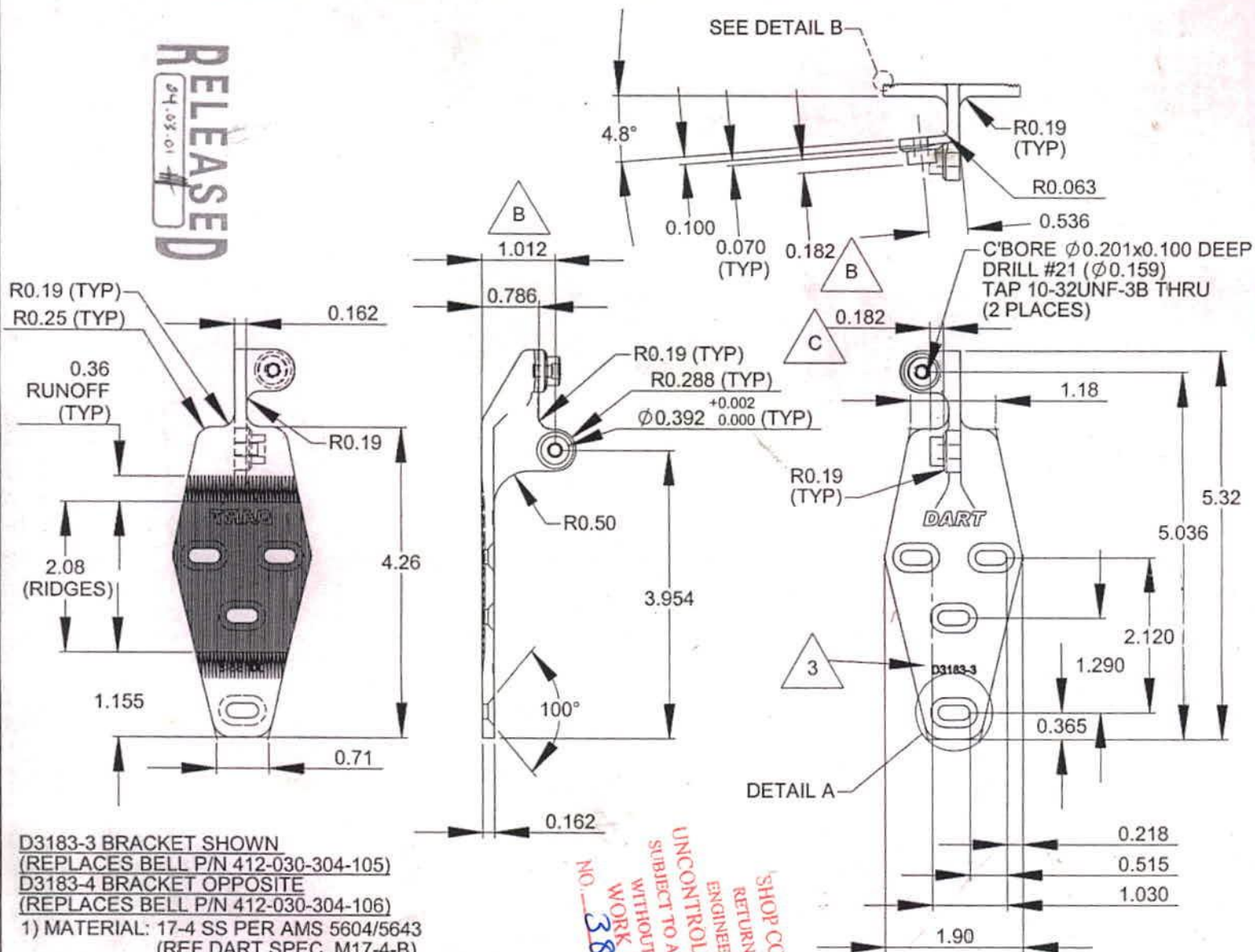
SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38982

COPYRIGHT © 2003 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

QA COPY ISSUED

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
		D3183	SHEET 3 OF 4
DATE	TITLE		SCALE
04.02.17	BRACKET ASSEMBLY		1:2



D3183-3 BRACKET SHOWN  
(REPLACES BELL P/N 412-030-304-105)  
D3183-4 BRACKET OPPOSITE  
(REPLACES BELL P/N 412-030-304-106)

- 1) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 3) ENGRAVE DART P/N & LOGO AS SHOWN
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38982  
WISE NOTED

COPYRIGHT © 2003 BY DART AEROSPACE LTD

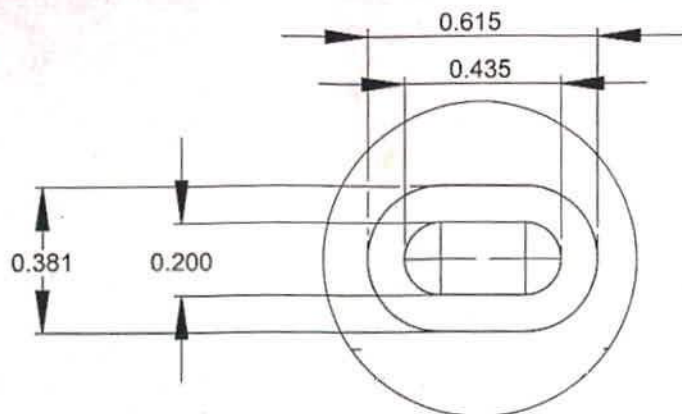
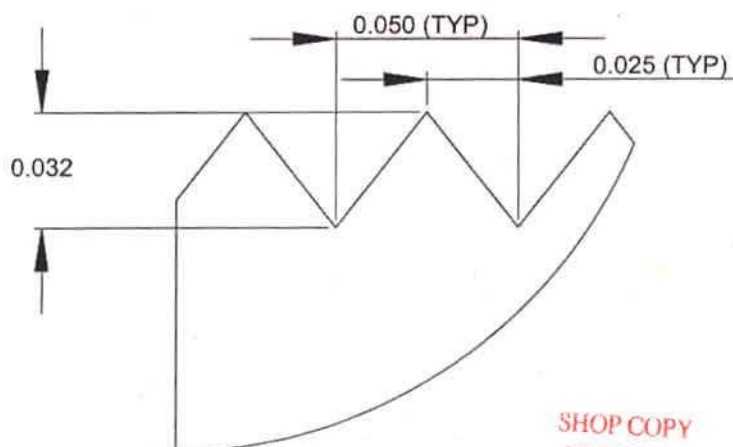
THIS DOCUMENT IS PRIVATE AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.

RELEASED  
24-03-01

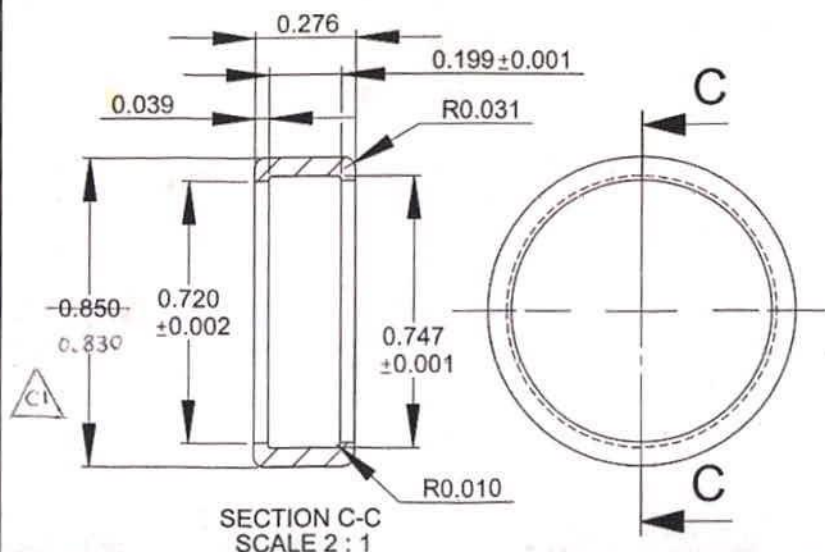


**DART**

DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. <b>D3183</b>	REV. C SHEET 4 OF 4
DATE <b>04.02.17</b>		TITLE <b>BRACKET ASSEMBLY</b>	SCALE 1:1

**DETAIL A (2 : 1)****RELEASED**  
04.03.01**DETAIL B (20 : 1)**

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. 38982

**D3183-9 CAP**

- 1) MATERIAL: DELRIN ROD, Ø1.00  
(REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

**D3183-045 BEARING ASSEMBLY**

- 1) ASSEMBLE D3183-5 BEARING AND  
D3183-9 CAP

COPYRIGHT © 2003 BY DART AEROSPACE LTD.

THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.